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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/619,303

07/14/2003

Yusuke Tamaki

35861

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7590

04/07/2005

PEARNE & GORDON LLP

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CLEVELAND, OH 44114-3108

EXAMINER

MENEFEE, JAMES A

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/619,303

Applicant(s)

TAMAKI ET AL.

Examiner

James A. Menefee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

Figures 3 and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art ("APA") in view of Scott (US 6,700,698). See applicant's Fig. 3 and the discussion thereof on pages 1-2. Fig. 3 is described as conventional and thus is admitted prior art.

Regarding claim 1, APA discloses a laser resonator comprising a pair of reflection portions 103 provided such as to allow a laser beam to oscillate therebetween, a laser medium 104 provided on the optical path between the reflection portions 103, and an excitation portion 105 for exciting the laser medium 104. There is not disclosed an optical system on the optical path between the laser medium and the reflection portions for changing the state of the laser in the lasing medium, nor a movement portion for moving the optical system along the optical axis of the laser.

Scott teaches in Fig. 10 (see also col. 15 lines 56-65) that an optical system 120 may be provided along an optical path of the laser beam. The element 120 is for compensating for thermal lensing, just as in the present invention, and therefore can be said to change the state in the laser medium. It would have been obvious to one skilled in the art to include optical system 120 in order to compensate for thermal lensing, as taught by Scott. While a “moving portion” is not explicitly described, it is implicit from Scott that there is a moving portion. Scott teaches that the element 120 can be moved along the optical axis to adjust the degree of compensation, therefore there must necessarily be some moving portion to accomplish this moving.

Regarding claim 2, APA and Scott do not teach explicitly that there are a pair of optical systems on opposite sides of the laser medium between the medium and the reflecting portions. Indeed Scott only teaches one optical system 120. However, it has been held that absent a new and unexpected result, a duplication of parts is not patentably significant. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (holding that even though the reference did not disclose a plurality of ribs, a mere duplication of parts has no patentable significance unless a new and unexpected result is produced.). Here, the claim requires a mere duplication of parts, including

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the optical system on both sides of the resonator, while the prior art teaches a system only on one side. One skilled in the art would have understood that in the operation of the laser in APA, a beam will oscillate in both directions in the resonator. Therefore the problem of thermal lensing would be present on either side of the resonator. It would not be a new or unexpected result to solve the same exact problem in both sides of the resonator, therefore it would have been obvious to one skilled in the art to duplicate the optical system of Scott on either side of the APA resonator, yielding the claimed limitations. Note claim 2 is alternatively rejected using prior art, see below.

Regarding claim 3, APA discloses the excitation portion 105 is an excitation laser device for directing an excitation laser beam 108 into the laser medium.

Regarding claim 4, APA discloses a dichroic mirror 109 for directing the excitation beam 108 onto the laser medium 104 along an optical axis roughly overlapping said laser beam. In Scott Fig. 10, the optical system 120 that was deemed obvious above is located next to the end mirror 29; similarly, one skilled in the art would place the system 120 near to end reflectors 103 in APA, therefore arriving at the claimed limitation that the dichroic mirror 109 be between the laser medium 104 and the optical system.

Regarding claim 5, as noted above the optical system of Scott may be moved along the optical axis to adjust the degree of compensation, therefore changing the state of the laser in the laser medium.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA and Scott as applied to claim 1 above, and further in view of Plaessmann et al. (US 5,546,222). APA and

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Scott teach the limitations of claim 1 as noted above. Neither APA nor Scott teach the use of a second optical system on opposite ends of the laser medium. Plaessmann teaches a gain medium 13 including optical systems 29a and 29b located on opposite ends of the laser medium for compensating for thermal lensing. See Fig. 2, col. 9 lines 18-25. It would have been obvious to one skilled in the art to place a pair of Scott's optical systems 120 on opposite ends of the laser medium, because this configuration will still compensate for thermal lensing, and furthermore this allows for the compensation without altering the beam path through the medium, as taught by Plaessmann.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

LaPlante et al. (US 5,757,842) also teaches movable optical systems on either side of a laser medium for compensating for thermal lensing, however LaPlante's optical systems are movable normal to the optical axis rather than along it.

Yasui et al. (US 5,892,789) also teaches that optical systems 6a, 6b may be movable along the optical axis for compensating for thermal lensing. Col. 21, lines 35-46.

Caprara et al. (US 5,912,912) teaches that an optical system 34A (Fig. 9) may be translated along the optical axis to compensate for thermal lensing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (571) 272-1944. The examiner can normally be reached on M-F 8:30-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James Menefee  
April 1, 2005